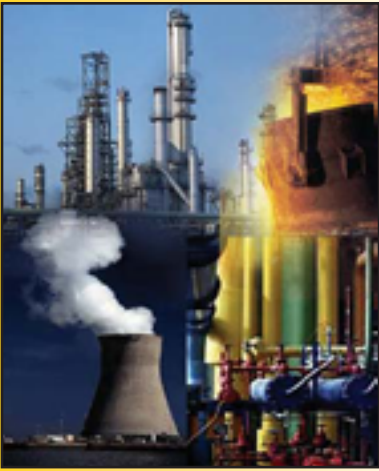


Sum-Kool®

Chelating Descaler



Chemicals

- **Sublime® (Descaler)**
- **Alimex (Descaler)**
- **Morcon-10 (Descaler)**

- **Xtra-Clean (Degreaser)**
- **Sum-Clean® (Degreaser)**
- **Sur-Clean (Degreaser)**

Chemical Equipment



Sublime® Skid

Sum-Kool® Product Benefits

- Removes encrusted lime scale, rust and corrosion from water-wetted surfaces
- Non-toxic, non-hazardous and biodegradable
- Non-acid and does not require neutralization
- Non-corrosive and will not adversely affect the following materials: stainless steel, carbon steel, brass, admiralty metal, copper, iron, lead, aluminum, PVC plastic, polyethylene, rubber, leather or any metal or material normally found in water-wetted equipment
- Operates in a pH range from 6.0 to 8.5
- Can be disposed in municipal water handling operations

Sum-Kool® Applications

- All power plant boilers and piping systems including nuclear power plants
- Equipment in refineries, utility companies, paper mills, chemical plants, foundries and other industries
- Sewage disposal plants, water treating facilities and other municipal water handling operations
- Compressor stations and radiator systems of all types including closed loop cooling systems
- Any equipment that is water cooled in any manner or that requires the removal of multivalent metal ions
- Applications in office buildings, hospitals and electronic facilities where accidental spills or leaks could result in adverse effects
- Any cleaning application requiring a solution with an extremely low metal ion content

Materials Compatibility Warning

Sum-Kool® may adversely affect materials containing magnesium or zinc. These materials should be tested to ascertain the concentration, temperature and time effects before treatment with Sum-Kool®. It is recommended that treatment be at a concentration of less than 2 percent, a temperature not over 140°F and for less than 2 hours to prevent etching.

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Sum-Kool®

Application Procedures

Sum-Kool cleans by chemically tying up the multivalent metal ions in solution. The time required for any given application will depend upon the temperature available, the concentration of the Sum-Kool solution and the quantity of scale, rust and corrosion present.

Sum-Kool solution is most effectively used by circulating it through the equipment to be cleaned. When possible, circulation should be upflow to assure all of the internal surface is covered.

While it is difficult to provide a detail procedure for the cleaning operation, since every application is different, most applications have a number of steps in common.

1. The equipment to be cleaned (compressor, heat exchanger, pump, filter system, boiler, etc...) should be shut down, drained and a visual inspection made to ascertain the amount of scale deposited. Consult the Concentration Selection Guide for the approximate concentration of Sum-Kool to be used.
2. The equipment should be closed, filled with clean water and backflushed for 10 minutes to remove as much loose scale and debris as possible. The equipment should then be completely drained of all water.
3. A Sum-Kool solution of appropriate strength (from Concentration Selection Guide) should be added to the system and circulated while bringing the solution to the desired temperature (100°F - 200°F).
4. Circulation should continue for two to twenty four hours depending on the quantity and composition of scale to be removed. Inspection on 2 hour intervals should give you some guide as to the appropriate length of time.
5. When the cleaning solution is spent and scale is still present repeat the cleaning process.
6. There will normally be a slight odor of ammonia as the Sum-Kool solution is spent. The pH of the solution should also rise to approximately 8.0, however, if the pH of the water used to make the cleaning solution was very low the solution could become spent without reaching a pH of 8.0. Visual inspection is the best method of judging completion of the process.

When the cleaning process is complete, drain the system and flush with fresh water before returning it to service.

Physical Properties		Concentration Selection Guide	
APPEARANCE	-	Blue Green Color	
		Pleasant Odor	
SPECIFIC GRAVITY	-	1.06	
BOILING POINT	-	214°F	
FREEZING POINT	-	15°F	
FLASH POINT	-	None	
Scale Thickness		% Sum-Kool in Water	
1 /16"		5 %	
1/8"		10%	
1/4"		15%	
1/2"		20%	
1"		25%*	
*May require multiple cleanings.			

CLEANING TIME	Temperature & Cleaning Time														
Cleaning time depends on many factors including scale composition, solution temperature, solution concentration, thickness, surface area to volume ratio, agitation and recirculation rate. For this reason only approximate times can be given.	<table border="1"> <thead> <tr> <th>Solution Temperature</th> <th>Approximate Cleaning Time</th> </tr> <tr> <th>°F</th> <th>Hours</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>24+</td> </tr> <tr> <td>125</td> <td>16-24</td> </tr> <tr> <td>150</td> <td>8-16</td> </tr> <tr> <td>175</td> <td>4-8</td> </tr> <tr> <td>200</td> <td>2-4</td> </tr> </tbody> </table>	Solution Temperature	Approximate Cleaning Time	°F	Hours	100	24+	125	16-24	150	8-16	175	4-8	200	2-4
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Sum-Kool can be used in a number of other applications such as on line cleaning and as a metal surface treatment to prevent corrosion. Consult with your Summit Technical Representative for additional information.															